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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 10/774,161
Filing Date: February 06, 2004
Appellant(s): BREESE, D. RYAN

Shao-Hua Guo
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed December 4, 2009 appealing from the Office action mailed August 14, 2009.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct—there has been no amendment after final.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

| | | |
|---|---|---|
| 3,179,326 | UNDERWOOD et al | 4-1965 |
| 6,391,411 | DUCKWALL, JR et al | 5-2002 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4-9, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Underwood et al (see col. 1, lines 57-65; col. 3, line 69 through col. 4, line 6; col. 4, lines 22-62) or Duckwall, Jr et al (see col. 2, lines 17-21 and 41-45; col. 3, line 43 through col. 4, line 34; col. 5, lines 47-51).

Either applied reference discloses the basic claimed method comprising orienting by drawing in a machine direction (MD) a polyethylene blown film, wherein the polyethylene is a high density polyethylene (HDPE) of the instant density, the references lacking a clear showing that the draw-down ratio would be "**greater than 10:1** to produce an MD oriented film having a **1% secant MD modulus of 1,000,000**

**psi** or greater" (emphasis added) as set forth in claim 1. The references also lack a clear teaching of the instant number-average molecular weight.

Note that the draw ratio of Underwood et al is such that the film is stretched at least 700% (see col. 4, lines 41-43) and that it is preferable to stretch the film "at least 900% or greater" (col. 4, lines 53-54). Example 1 in column 5 shows that a 900% stretch is obtained with a draw ratio of 10, or 10:1. Hence, it is rather clear that a film stretched at a higher percentage than 900% would also be stretched at a draw ratio of greater than 10:1 as required by the instant claims. Underwood et al (see passage bridging columns 3 and 4) also discloses that the minimum draw ratio would be easily determined by one of ordinary skill in the art, it being understood that the desired draw ratio would provide a film with the desired properties. Given the disclosure of Underwood et al, it is respectfully submitted that the exact draw ratio would have been readily determined dependent on the exact film properties --clarity and strength— desired. A draw ratio of "greater than 10:1", and as high as 11:1, is submitted to have been clearly obvious over Underwood et al, if not intended or anticipated by the disclosure thereof. Given that the 1% secant modulus is a result effective variable that would be a characteristic of the film, and would directly correspond to the amount of stretch, it is submitted that the instant value of 1 million psi or greater would have also been obvious over Underwood et al as such would have been an inherent characteristic of the HDPE film so stretched. The exact number-average molecular weight of the polyethylene resin is submitted to have been well within the skill level of the art and obvious dependent on the exact polymerization conditions employed.

Duckwall, Jr et al is similar to Underwood et al and teaches that the film would be stretched at a ratio of from "about 2 to about 10"—see col. 5, line 49. It is submitted that the upper limit of this stretching would render "greater than 10:1" as obvious, since a stretching ratio of "about 10" would obviously include ratios slightly greater than 10, indeed as high as 11:1. The aspects of the 1% secant modulus and the number-average molecular weight have been discussed in the paragraph supra with respect to Underwood et al and are hereby repeated with respect to Duckwall, Jr et al. It should also be noted that both references are concerned with the strength characteristics of the polyethylene film being stretched. Underwood et al desires "tremendous tensile strengths" (see col. 1, lines 63-65) and Duckwall, Jr et al wants a film of "superior toughness properties" (see col. 1, line 11). It is customary in the film art to stretch a film to enhance its properties, chiefly strength and elongation properties in the stretched direction. One of ordinary skill in this art would realize that the exact amount of stretch would depend on the exact film properties desired, and that the properties desired are result effective variables dependent on the amount of stretch, as long as the film would not be stretched past the breaking point thereof. There is certainly sufficient disclosure in both applied references to render the instant stretch or draw ratio of greater than 10:1 as obvious and the instant secant modulus strength property would have been a direct result of the stretch ratio used.

**(10) Response to Argument**

Appellant's main argument against both references is that neither teaches orienting a film so that the film has the instant secant modulus of greater than 1 million psi and that neither teaches the instant drawdown ratio of greater than 10:1, or 11:1 as set forth in dependent claim 14. Essentially, both arguments are interrelated, since the secant modulus is a property certainly dependent on the extent of the drawdown ratio. In the paragraph bridging pages 3 and 4 of the brief, appellant submits that ample evidence has been shown to demonstrate that a drawdown ratio of less than 10:1 does not provide a MD oriented film with the instant secant modulus of greater than 1 million psi. However, it is respectfully submitted that appellant has simply demonstrated on record that the drawdown ratio and the secant modulus are directly proportional to one another, and that increasing the ratio will naturally increase the secant modulus. Looking at the Tables referenced by appellant in the specification, it is clear that this is so. However, it must be stressed that such is not an indicator of patentability. There is no showing of unexpected results for the instant secant modulus or drawdown ratio, or that one of ordinary skill in the art would not have expected to obtain a larger secant modulus with greater stretching or drawdown ratios. In fact, as already noted in the paragraph supra, this is to be completely expected given that one does not stretch the film past its elastic breaking point. Clearly, the breaking point of the film would have been readily determined as would the exact draw ratio required to produce the desired secant modulus strength property in the film. Appellant submits that Underwood et al is not concerned with orienting the film to give it a high MD modulus. While the secant

modulus is not expressly disclosed in Underwood et al as a property of the film, the reference does want to orient the film to provide a high tensile strength to the film—see col. 1, lines 57-65. Like tensile strength, secant modulus constitutes a film property that would be increased upon orientation or drawing. Appellant's comments concerning the tear tape of Underwood et al are also incorrect. For one thing, the tear tape is not the flexible film, but is heat-sealed thereto (Underwood et al, col. 1, lines 10-14). See column 4, lines 3-6 of Underwood et al, which clearly teaches that the orientation below a minimum will result in partial orientation and a tear tape that does not tear as desired. Hence, a high orientation for the tear tape is expressly desired by Underwood et al. Also, appellant's comment that flexible films require a low modulus rather than a high modulus is without any support, although it is not particularly germane to whether or not the tear tape of Underwood et al has a high modulus. Again, the tear tape of Underwood et al—the film being stretched-- is not the flexible film but is rather heat-sealed to the flexible film. Appellant points to col. 8, lines 64-70 of Underwood et al to show that the reference does not teach that the film should be stretched to greater than 900%. However, column 4, lines 50-54 of Underwood et al clearly shows that this is simply not so. Contrary to appellant's comments, a fair reading of Underwood et al would indeed encourage one of ordinary skill in the art to come up with the instant invention.

Appellant suggests that Duckwall, Jr et al is not concerned with improving a film's modulus since the reference is directed to improving the film's water vapor transmission. However, column 1, line 11 of Duckwall, Jr et al wants a film of "superior

toughness", so the reference does indeed desire a film of increased strength, also. Appellant notes that Duckwall, Jr et al (in Examples 1 and 2 therein) teaches modulus values too low to be encompassed by the instant claims. However, it must also be noted that these modulus values are obtained for films stretched at low ratios. In fact, a comparison of the modulus values and stretch ratios in Duckwall, Jr et al and those in instant Table 1 show a similar relationship between the draw ratio and the secant modulus. It has never been stated that Duckwall, Jr et al shows stretching at the instant ratio of greater than 10:1 to form a film with the instant secant modulus of greater than 1 million psi. What has been stated is that these parameters would have been obvious over Duckwall, Jr et al and appellant has never successfully rebutted this line of reasoning. The instant specification contains tables that show the secant modulus to be proportional to the drawdown ratio. Duckwall, Jr et al shows that films stretched at ratios of 3 and 4.5:1 exhibit secant modulus values very similar to the instant values listed in the instant tables when stretched at these lower ratios. Hence, there is every reason to expect that a higher stretch ratio would impart a greater secant modulus to the film of Duckwall, Jr et al. There is absolutely nothing critical about the instant drawdown ratio of greater than 10:1. It just so happens that such a stretch ratio provides a film so stretched with a secant modulus greater than 1 million psi. Although appellant believes otherwise, as noted supra, it is respectfully submitted that this would have been readily determined by one of ordinary skill in the art through routine experimentation, based on the disclosure of either of Underwood et al or Duckwall, Jr et al.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Mathieu D. Vargot/

Primary Examiner, Art Unit 1791

Conferees:

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791

/Benjamin L. Utech/

Primary Examiner